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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/080,849	02/22/2002	Aaron J. Hanna	K35A1056	9641

35219 7590 06/20/2006

WESTERN DIGITAL TECHNOLOGIES, INC.

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EXAMINER

MAGEE, CHRISTOPHER R

ART UNIT

PAPER NUMBER

2627

DATE MAILED: 06/20/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

DETAILED ACTION

Response to Arguments

1. Applicant's arguments, see Remarks, pages 15-19, filed 4/18/2006, with respect to the rejection(s) of claim(s) 1-4, 6-8, and 11-14 under Takagi et al. (US 6,721,133 B2) have been fully considered and are persuasive. Therefore, the rejection has been withdrawn. However, upon further consideration, a new ground(s) of rejection is made in view of Owe et al. (US 5,012,369). The new ground (s) of rejection follows:

Claim Rejections - 35 USC § 102

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

- Claims 1, 6, and 11 are rejected under 35 U.S.C. 102(b) as being anticipated by Owe et al. (US 5,012,369).

- Regarding claims 1, 6 and 11, Owe discloses a disk drive [col. 1, lines 7-16] having a disk with a recording surface (inherent property of a disk drive), comprising:

- a head stack assembly [Figs. 1 and 2], including:

- a body portion [col. 5, lines 8-9];

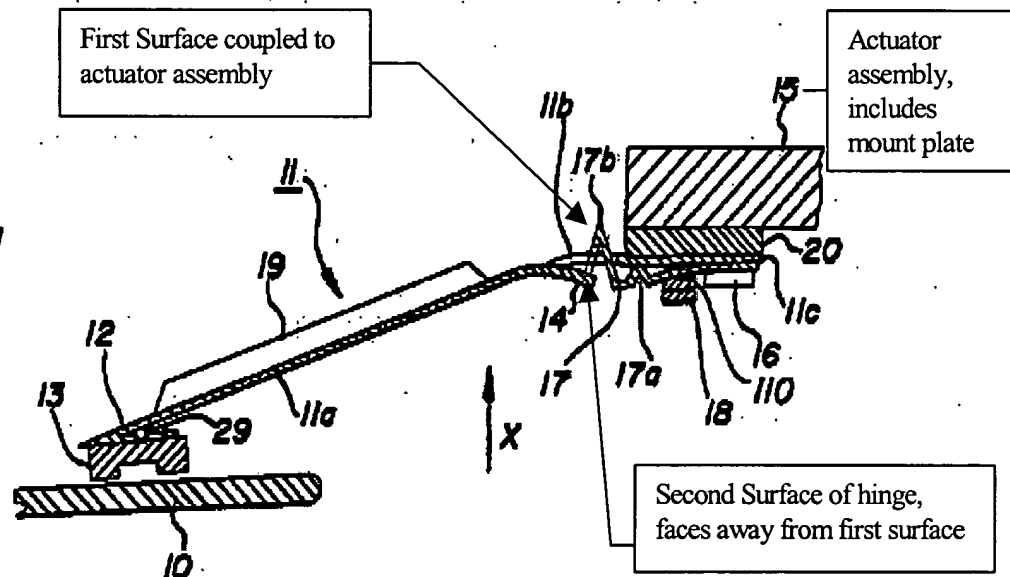
- an actuator arm [15] cantilevered from the body portion;

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a hinge portion [17], a first surface of the hinge being coupled (i.e., connected, fastened) to the actuator arm [Fig. 1];

a load beam [11] having a first end and a second end, the first end including a load beam surface that faces and contacts a second surface of the hinge [17], the second surface facing away from the first surface [Embedded Fig. 1];

a gimbal [12] coupled to the second end of the load beam [11], and a slider [13] coupled to the gimbal.

U.S. Patent**Apr. 30, 1991****Sheet 1 of 3****5,012,369****FIG. 1**

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

- Claims 2 and 7 are rejected under 35 U.S.C. 103(a) as being unpatentable over Owe et al. (US 5,012,369) as applied to claims 1 and 6 above, and further in view of Inoue et al. (hereinafter Inoue) (US 6,362,936 B2).

- Regarding claims 2 and 7, Owe discloses all the features as previously noted, except the mount plate having a thickness greater than 0.22 mm.

Inoue discloses a mount plate having a thickness greater than 0.22 mm [col. 2, lines 60-63].

It would have been obvious to one of ordinary skill in the art at the time the invention was made to make the mount plate and hinge of Owe with the dimensions as taught by Inoue.

The rationale is as follows: One of ordinary skill in the art at the time of the invention would have been motivated to make the mount plate and hinge of Owe with the dimensions as taught by Inoue so as to provide predetermined mechanical characteristics such as natural frequency and stiffness [Inoue; col. 1, lines 30-32].

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4. Claims 3, 4, 8, 12 and 13 are rejected under 35 U.S.C. 103(a) as being unpatentable over Owe et al. (US 5,012,369) as applied to claims 1, 6 and 11 above.

- Regarding claims 3 and 12, Owe discloses all the features as previously noted, except the hinge having a thickness greater than 0.05 mm.

- Regarding claims 4 and 13, Owe discloses all the features as previously noted, except the load beam having a thickness greater than 0.12 mm.

- Regarding claim 8, Owe discloses all the features as previously noted, except the hinge having a thickness greater than 0.05 mm and the load beam having a thickness greater than 0.12 mm.

Referring to claims 3, 4, 8, 12 and 13, Owe does not set forth the dimensions in these claims. However, it would have been obvious to one of ordinary skill in the art at the time the invention was made to provide the hinge and load beam of Owe with the claimed dimensions through routine experimentation and optimization in the absence of criticality. More particularly, where the general conditions of a claim are disclosed in the prior art, it is not inventive to discover the optimum or workable ranges by routine experimentation. *In re Swain et al.*, 33 CCPA (Patents) 1250, 156 F.2d 239 70 USPQ 412; *Minnesota Mining and Mfg. Co. v Coe*, 69 App. D.C. 217, 99 F. 2d 986, 38 USPQ 213; *Allen et al. v Coe*, 77 App. D.C. 324, 135 F. 2d 11, 57 USPQ 136.

Allowable Subject Matter

5. Claims 5, 9, 10 and 14 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

6. Claims 15-54 are allowed. The following is a statement of reasons for the indication of allowable subject matter:

- Claim 15 specifies a suspension for a head stack assembly of a disk drive, which requires:

“the hinge including a first surface having a first convex portion defining a first radius of curvature, adjacent the first hinge end and adjacent a first concave portion of the first surface, defining a second radius of curvature, adjacent a second convex portion of the first surface, defining a third radius of curvature adjacent a second concave portion of the first surface, adjacent the second hinge end.”

The closest prior art of record, Jagt et al. (hereinafter Jagt) (US 5,898,543), shows a hinge including a first surface having a first convex portion defining a first radius of curvature, adjacent the first hinge end and adjacent a first concave portion of the first surface, defining a second radius of curvature, adjacent a second convex portion of the first surface, defining a third radius of curvature. Jagt does not show the third radius of curvature adjacent a second concave portion of the first surface adjacent the second hinge end as required by the applicant's claimed invention.

- Claims 23, 27, 32, 37, 42, 47 and 51 specify a load beam for a head gimbal assembly, which requires:

“the hinge portion defining a radius geometry that includes at least three radii of curvatures configured to lower load beam toward the disk such that a first surface of the hinge portion defines at least two concave portions and at least two convex portions, the first surface of the hinge portion being coupled to the actuator arm.”

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The closest prior art of record, Jagt et al. (hereinafter Jagt) (US 5,898,543), shows the radius geometry includes a first radius of curvature, a second radius of curvature and a third radius of curvature, the first radius being closer to the mount plate than the second radius, the second radius being closer to the mount plate than the third radius, and wherein the third radius is greater than the second radius. Jagt does not show the first surface of the hinge portion defines at least two concave portions and at least two convex portions, the first surface of the hinge portion being coupled to the actuator arm as claimed in the applicant's invention.

Conclusion

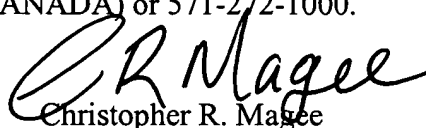
7. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Christopher R. Magee whose telephone number is (571) 272-7592. The examiner can normally be reached on M-F, 8: 00 am-4: 30 pm.

PLEASE NOTE the recent change in art unit designation from art unit 2653 to art unit 2627.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Andrea Wellington can be reached on (571) 272-4483. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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8. Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.



Christopher R. Magee

Patent Examiner

Art Unit 2627

June 13, 2006

crm



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SUPERVISORY PATENT EXAMINER